

CLAIMS

What is claimed is:

1. A bread maker performing a plurality of bread making processes, in an oven compartment, which accommodates ingredients to make bread, at respective processing temperatures during predetermined processing times, comprising:

a plurality of heaters heating the ingredients, to make the bread, in different directions from each other;

a heater driving part supplying a driving power to each heater and to control a heating power of each heater;

a temperature sensor detecting a temperature of the oven compartment;

a process condition storing part storing process condition data including the processing times and the processing temperatures of the plurality of bread making processes; and

a controller controlling the heater driving part to maintain temperature of the oven compartment at the processing temperature by controlling the heating power of each heater according to the temperature detected by the temperature sensor and the process condition data of the process condition storing part.

2. The bread maker according to claim 1, wherein the plurality of heaters comprises:

an upper oven heater and an upper door heater in upper parts of an inside wall of the oven compartment;

a lower oven heater and a lower door heater in lower parts of the inside walls of the oven compartment; and

a door to open and close an front opening of the oven compartment, wherein the upper oven heater and the upper door heater heat front and back areas of the upper the of the oven compartment, and

the lower oven heater and the lower door heater heat front and back areas of the lower parts of the oven compartment.

3. The bread maker according to claim 2, wherein the controller controls the heater driving part to turn the upper oven heater, the upper door heater, the lower oven heater, and the lower door heater off during a kneading process.

4. The bread maker according to claim 2, wherein the controller controls the heater driving part to decrease the heating powers of the upper oven heater and the upper door heater and to relatively increase the heating powers of the lower oven heater and the lower door heater according to the heating powers of the upper oven heater and the upper door heater during a leavening process.

5. The bread maker according to claim 4, wherein the controller controls the heater driving part so that the heating powers of the upper oven heater and the upper door heater are turned off and duties of the lower oven heater and the lower door heater are about 10 through 40% during the leavening process.

6. The bread maker according to claim 2, wherein the controller controls the heater driving part to increase the heating powers of the upper oven heater and the upper door heater and to relatively decrease the heating powers of the lower oven heater and the lower door heater according to the heating powers of the upper oven heater and the upper door heater during a baking process.

7. The bread maker according to claim 6, wherein the controller controls the heater driving part so that duties of the heating powers of the upper oven heater and the upper door heater are about 80 through 100% and duties of the lower oven heater and the lower door heater are about 70 through 90% during the baking process.

8. A method to control a bread maker, in which a plurality of heaters heat ingredients to make bread from various directions, performing a plurality of bread making processes in different processing temperatures from each other during predetermined processing times;

storing process condition data of the bread;

sensing temperature of an oven compartment;

controlling a heater driving part to maintain temperature of the oven compartment.

9. The method according to claim 8, further comprising providing a mixing bag having a bar code registered with data of processing times and processing temperatures for use with the mixing bag.

10. A bread maker, including an oven compartment, which accommodates ingredients to make bread using various bread making processes, comprising:
a plurality of heaters, requiring variable supplied driving powers, to have variable heating powers, multi-directionally heating the ingredients;
a heater driving part supplying the driving power to control the heating powers;
a temperature sensor detecting temperature of the oven compartment;
process condition storage storing process condition data of the bread making processes;
and
a controller controlling the heater driving part to maintain a predetermined temperature in the oven compartment according to the sensed temperature of the oven compartment and the stored process condition data.

11. The bread maker according to claim 10, wherein the plurality of heaters comprise:
an upper oven heater and an upper door heater in upper parts of an inside wall of the oven compartment;
a lower oven heater and a lower door heater in lower parts of the inside walls of the oven compartment; and
a door to open and close an front opening of the oven compartment, wherein
the upper oven heater and the upper door heater heat front and back areas of an upper portion of the oven compartment, and
the lower oven heater and the lower door heater heat front and back areas of a lower part of the oven compartment.

12. The bread maker according to claim 11, wherein the controller controls the heater driving part to turn the upper oven heater, the upper door heater, the lower oven heater, and the lower door heater off during a kneading process.

13. The bread maker according to claim 11, wherein the controller controls the heater driving part to decrease the heating powers of the upper oven heater and the upper door heater and to relatively increase the heating powers of the lower oven heater and the lower door heater according to the heating powers of the upper oven heater and the upper door heater during a leavening process.

14. The bread maker according to claim 13, wherein the controller controls the heater driving part so that the heating powers of the upper oven heater and the upper door heater are turned off and duties of the lower oven heater and the lower door heater are 10 through 40% during the leavening process.

15. The bread maker according to claim 10, wherein the controller controls the heater driving part to increase the heating powers of the upper oven heater and the upper door heater and to relatively decrease the heating powers of the lower oven heater and the lower door heater according to the heating powers of the upper oven heater and the upper door heater during a baking process.

16. The bread maker according to claim 15, wherein the controller controls the heater driving part so that duties of the heating powers of the upper oven heater and the upper door heater are 80 through 100% and duties of the lower oven heater and the lower door heater are 70 through 90% during the baking process.

17. A bread maker, including an oven, which accommodates ingredients to make bread using various bread making processes involving various kneading processes, comprising:
a plurality of heaters, requiring variable supplied driving powers, to have variable heating powers, multi-directionally heating the ingredients;
a heater driving part supplying the driving power to control the heating powers;
a temperature sensor detecting temperature of the oven compartment;
process condition storage storing process condition data of the bread making processes;
and

a controller controlling the heater driving part to maintain a predetermined temperature in the oven compartment according to the sensed temperature of the oven compartment and the stored process condition data, wherein the controller effectively turns the heaters off and on during the kneading processes thereby maintaining at least a setup temperature of the kneading processes.

18. A bread maker, including an oven having upper and lower portions, and a door having upper and lower portions, which accommodates ingredients to make bread using various bread making processes involving various leavening processes, comprising:

a plurality of heaters, respectively, in the lower portion of the oven, the lower portion of the door, the upper portion of the oven, and the upper portion of the door, requiring variable supplied driving powers, to have variable heating powers, heating the ingredients;

a heater driving part supplying the driving power to control the heating powers;

a temperature sensor detecting temperature of the oven compartment;

process condition storage storing process condition data of the bread making processes;

and

a controller controlling the heater driving part to maintain a predetermined temperature in the oven according to the sensed temperature of the oven compartment and the stored process condition data, wherein during the leavening processes, the controller effectively controls the heater in the lower portion of the oven and the heater in the lower portion of the door, thereby providing heat.

19. The bread maker according to claim 18, wherein the controller effectively controls the heater in the upper portion of the oven and the upper portion of the door to provide heat to the extent that the ingredients do not burn.